

Reasons And Solutions For The Road Traffic Accidents In India

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Abstract: More than 140,000 people were killed on India's roads in 2015. According to figures released by the government, the total number of fatalities represents an increase of 4.6% on the previous year. More than half of the people killed in more than 500,000 road accidents in 2015 were aged 15-34. Road accidents cause death or severe injury. This paper deals with reasons and solutions for the road traffic accidents in India in the form of a review article using the available statistics in the literature.

Keywords: Road Traffic Accidents; Traffic Signals; Cross Roads

I. INTRODUCTION

Road safety is an issue of national concern, considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people. Today, Road Traffic Injuries are one of the leading causes of deaths, disabilities and hospitalizations, with severe socioeconomic costs, across the world. Road traffic safety constitutes the safety measures to be taken up to prevent the road users from being killed or injured. Road users are typically drivers, passengers, cyclists, pedestrians, etc. The road safety system's strategy is to ensure that in an event of a crash, the impact is not so much as to cause death or any serious injury. Any road accident is all the more depressing as the victims are very healthy just before the crash. More than one million people die on the road every year according to the WHO (World Health Organization) and road traffic injuries are the leading cause of death among young people, aged 15–29 years. In India, for the first time in two consecutive years, i.e. 2012 and 2013, it was reported that there was a 2.9% decline in the number of road accidents, the number of persons killed and the number of persons injured in road accidents. Karnataka was ranked the fourth highest in the total number of road accidents (44,020) in India in 2013.

II. REASONS FOR ROAD ACCIDENTS IN INDIA

A road accident can lead to several unwanted consequences, including death, permanent injuries, loss of earnings, etc.

A. Caused by the Government and the Traffic Police force

(i). Road defects: Speed Breakers

The Indian roads aren't really known for proper road construction and this is a major problem in India. Speed breakers are one of the main reasons for the road accidents and deaths in India. Motorists try to avoid these speed bumps on the road and end up in

road accidents. Motorcyclists end up in problems because of improper bumps more than car drivers. The speed breakers are usually unscientific and constructed at unwanted places.

(ii). Road defects: Potholes

Indian roads are unfortunately famous for their potholes. Potholes are bowl-shaped depression in the roads due to wear and tear and further deepened by the rain water. Motorists try to avoid these potholes and end up risking their lives. Potholes not only cause strain on the spinal and overall health of the motorists when they drive, but they also ruin the vehicles' suspension and cause road accidents quite often.

(iii). Road digging

Road digging is usually done in India for laying/repair of the telephone wires or water pipes. These roads after being dug up will not be properly closed causing crevices in the road. These disturbances will cause road blocks, traffic jams and accidents as a result.

(iv). Poor lighting on roads and highways

There is a great lack of proper lighting on the Indian roads and express highways. This dim lighting will cause the decrease of visibility to the drivers. This may lead to fatal accidents on the highways.

(v). Lack of necessary road signs

There is a significant lack of road signs on the roads. The road signs are necessary to alert the motorists and pedestrians about the turns, speed limits, crossings, etc which will help them with the proper driving and road usage.

(vi). Obstacles

There are many obstacles that could be encountered on the road. Trees partially cover the roads reducing visibility of the drivers which may cause road accidents. Sudden unexpected turns, bends, curves, etc will surprise the drivers while driving and this may cause accidents.

(vii). Cross-roads

There are umpteen number of cross roads in the Indian Road design. As we see in Indian road design, the cross roads join the main road at a 90° angle and that is very dangerous while joining the main road.

(viii). Sidewalks

Sidewalk is a paved path for pedestrians at the side of a road. These sidewalks in Indian streets are usually not usable as they will have sudden crevices and openings. Also, the street vendors and the local shops will use the sidewalk causing disturbances to the pedestrians. This causes the pedestrians to walk on the road which is dangerous for them.

(ix). Dangerous curves in hilly areas

Dangerous curves and the roads on the hilly areas have caused many fatal accidents. Many HTVs have toppled over due to acute turns in the hilly areas of India. Landslides and marsh will cause skidding and the heavy vehicles will topple over.

B. Caused by the road users/civilians

(i). Not using helmets

A helmet is a form of protective gear worn to protect the head from injuries. The rate at which the number of two-wheelers in India is rising is 20 times the rate at which the human population is growing. In such a scenario, fatalities are only going to rise if things do not change fast. Therefore, it is very necessary for the motorcycle and scooter users to wear the helmets.

(ii). Triple-riding

According to law, three persons riding a motorcycle is illegal and unauthorised. In the event of fatal accidents, triple-riding would be considered a 'contributory negligence'.

(iii). Speeding

Another main reason for road accidents is over-speeding. Many drivers drive around 30 to 40 kmph over the speed limit and this is very common on the highways. Around one-third road accidents are caused due to over-speeding.

(iv). Distracted Driving

A distracted driver is not someone who ran a red light or someone who drove drunk. A distracted driver is a motorist that diverts his or her attention from the road, usually to talk on a cell phone, talk to the passengers, send a text message or eat food or even applying makeup. To safely drive a car, the driver must give full attention to the road. Drivers who divert their awareness, whether it's to talk on their cell phone or send text messages to their friends, end up putting the lives of the other drivers or pedestrians to risk. Distracted driving is especially dangerous because, whereas drunk driving usually occurs at night, automobile accidents caused by distracted

drivers can all day. Teens are most likely to engage in distracted driving. Research has shown that teens tend to engage in cell phone tasks much more frequently, namely text messaging, in riskier situations than adults. There is also a factor of teenage inexperience with driving that has to be taken into account.

(v). Negligent Parking

Vehicles are usually parked negligently on the side of the roads without any kind of warning or reflectors, that too in narrow roads. This causes inconvenience for the easy plying of the other vehicles. Also, the vehicle which breaks down is left unattended on the roads. This causes several fatal accidents especially on the highways.

(vi). Drunk Driving

Drinking makes people lose the ability to focus and function properly. This makes it dangerous for the driver to operate the vehicle. Drunk-driving is another major cause for car accidents worldwide although this can easily be avoided.

(vii). Poor maintenance of vehicles

While driver error is the number one cause of car accidents, poorly maintained vehicles also make a large contribution to the road accidents every year. Vehicles that receive little or no servicing are accidents waiting to happen and there are several components that are regularly neglected.

(viii). Reckless Driving

Drivers have to be careful on the road. Reckless driving causes grave danger to the life of others and the driver himself. Reckless drivers change lanes too quickly, over-speed, passing red lights, make improper turns or tailgate before causing a car accident.

(ix). Driving while drowsy

Drowsy driving happens usually at night or early in the morning. This is also called river fatigue. Yawning, tiredness, boredom, restlessness are the marks of a sleepy driver. Drowsiness will decrease the attention of the driver and will mostly likely cause an accident.

(x). Other Reasons

Many other reasons like driving in the opposite lane, improper turns, unsafe lane changes, defects in the vehicle, not required tailgating and overtaking, running red lights and stop signs cause fatal road accidents.

(xi). Not crossing the road at pedestrian crossings

Pedestrians put themselves in danger if they aren't careful enough. Pedestrians should try to cross the road mainly at the designated pedestrian crossings.

(xii). Lack of lane discipline

In India, fast moving traffic is always supposed to occupy the rightmost lane while slower traffic sticks to the left. Not only does this make driving safer, it also improves car flow. If this lane discipline isn't followed, it makes it difficult for the other motorists and also makes overtaking difficult. Such overtaking will cause fatal accidents.

(xiii). Road Rage

Road rage is aggressive behavior by a motorist towards other road users. This behavior includes rude gestures, verbal insults, physical threats or dangerous driving methods targeted toward another driver in an effort to intimidate or release frustration. Road rage can lead to assaults and collisions that result in serious physical injuries or even death.

(xiv). Carrying huge amount of luggage in vehicles

The large amount of luggage when carried will end up blocking the view of the driver/rider, cause loss of balance of the motorcycle, and makes it difficult for the driver to drive.

(xv). Driving in rain and fog

Rain, fog and dust greatly affect the driving abilities of people. Rain will cause the roads to become slippery which will in turn decrease the grip of the tyres. This will cause road accidents. Rain, dust and fog will also decrease the visibility and this will create problems while driving.

(xvi). Dazing headlights

High-beam from headlights, particularly used during low visibility, is one of the causes of night time traffic accidents. Though the high-beam lights in cars are prohibited in the city limits, people continue to use them even when not required. The headlights have to be dipped when driving in city limits.

III. SOLUTIONS OR CONTROL MEASURES TO BE UNDERTAKEN

There are steps you the civilians and the government can undertake can take to help prevent accidents. Many accidents can be prevented and in those that are not preventable, the damage could be lessened.

C. By the government and traffic police force

(i). Proper road design

The road should always have at least two lanes on each side with a divider in the centre. This will reduce the road accidents by a great number and the divider will prevent head-on collisions.

(ii). Safety and warning signs

The city roads and highways have a great number of automobiles plying and it is very much advisable to have ample number of road signs put up to warn and alert the drivers.

(iii). Traffic signals

Traffic signals should be installed wherever there is haphazard traffic and this will reduce the confusion and road accidents caused. Traffic signals will help in the regulated movement of traffic. These signals should also have the CCTV facilities to identify the violators.

(iv). Fines and penalties

Collection of huge amount of money as fine will help in making the civilians be more alert to the road conditions and situations. People driving without driving licences, using cell phones while driving or motorcycle riders without helmets should be fined heavily. This will prevent them from making such mistakes in the future.

(v). Strict scrutiny before provision of driving licence

Strict scrutiny should be undertaken before issuing driving licences to new drivers. The new drivers should undergo tough driving exams and written exams to filter the inefficient drivers. Also, the drivers should undergo proper and frequent medical examinations for the diagnosis of epilepsy and heart diseases so that these will not be a problem for safe driving.

(vi). Severe punishment for drunk driving

There should be severe punishment given to drunk drivers and the drivers of hit and run cases. The people who cause fatal or severe accidents shouldn't be let-go easily and should undergo severe punishments like imprisonment or heavy fines and their driving licence should be confiscated.

(vii). Public awareness programmes

The government and the city traffic police should organize the public awareness programmes to educate the civilians about the importance of road safety. Also, the public should be made aware of first aid and the importance of the golden hour and proper medical care in case of a road accident.

(viii). Proper care and safety measures in the hilly areas

The steep and dangerous curves of the hilly areas should be considered and necessary arrangements like barricades and road signs should be put up to warn the drivers about the imminent dangerous curves. The steep roads and cliffs should have reflective signs to warn the drivers especially at night.

D. By the road users/civilians

(i). Use of helmets

Helmets are useful as safety gear to prevent injuries in an uncontrolled environment. A helmet can thus prevent or minimize injury to the head and brain. Helmets certified by the ISI (Indian Standards

Institute) should be used meticulously. Helmets should be sturdy and cover the head as well as the neck. The helmets that cover only the top of the head aren't advisable.

(ii). Citizens should be compassionate

The citizens should have the social responsibility and help others in need. They should attend to the casualties and take immediate action. They should inform the police force about the road accidents and also call for an ambulance in case of an emergency. They should have the social responsibility to help elders, disabled and small children when in need, for example, crossing the road. Also, they should have the courtesy to always leave way for an ambulance.

(iii). Maintenance of vehicles

The vehicle owners and drivers should always maintain their vehicles in top condition. They brakes, tyres and other components of the vehicle should be replaced and services as when necessary.

(iv). Purchase of safe vehicles

During the purchase of a vehicle, the buyer should give a great deal of importance to the safety aspects. The vehicle should have power steering, air bags, seat belts, four wheel drive, good braking systems and similar safety features.

(v). Avoid distractions

The motorists should always give utmost attention while driving. They should avoid loud music in cars and the motorcycle or scooter riders should avoid using headphones. Also, the motorists should completely avoid using their cell phones while driving. The co-passengers should avoid distracting the driver.

(vi). Adequate sleep

The motorists should have adequate sleep before driving, especially before driving long distances. This will eliminate the risk of the drowsy drivers.

(vii). Careful road-crossing

Pedestrians should take care before crossing the roads with heavy traffic. They should always cross at designated pedestrian crossings. They should always be aware of the oncoming traffic and look both ways before crossing the road.

IV. CONCLUSION

More than 140,000 people were killed on India's roads in 2015. According to figures released by the government, the total number of fatalities represents an increase of 4.6% on the previous year. More than half of the people killed in more than 500,000 road accidents in 2015 were aged 15-34. **Road accidents cause death or severe injury. They are generally caused by the negligence of both the traffic police force and the civilians. Thus, both the parties have**

to take severe steps to control the number of accidents.

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